California Public Utilities Commission

RENEWABLES PORTFOLIO STANDARD

Quarterly Report

1st Quarter 2015

I. ABOUT THE RPS AND THIS REPORT

California is aggressively bringing renewable generation online to meet its Renewables Portfolio Standard (RPS), one of the most ambitious renewable standards in the country.

California's RPS, codified in Public Utilities Code §§ 399.11 – 399.32[1], requires retail sellers, investor-owned utilities (IOUs), electric service providers (ESPs) and community choice aggregators (CCAs) regulated by the California Public Utilities Commission (CPUC or the Commission) to procure 33% of their annual retail sales from eligible renewable sources by 2020. The RPS also requires retail sellers to achieve intermediate RPS targets of 20% from 2011-2013 and 25% from 2014-2016. The CPUC and the California Energy Commission (CEC) are jointly responsible for implementing California's 33% RPS program.

While the RPS program is the primary vehicle for new utility-scale renewable energy development in California, there are other programs that stimulate development of customer-side renewable generation. The California Solar Initiative (CSI) and Self-Generation Incentive Program (SGIP) provide incentives for customers to install renewable distributed generation technologies that directly serve their on-site load.[2] The electricity generated from power systems installed through CSI and SGIP may contribute to the RPS provided they meet RPS eligibility requirements established by the CEC.[3] In addition, electricity generated by these facilities indirectly contributes to the RPS by reducing demand when serving customer load.

The Commission issues this report on the RPS program every quarter pursuant to the 2006 Budget Act Supplemental Report Item 8660-001-0462. This report focuses on California's three large IOUs: Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas & Electric (SDG&E). These IOUs currently provide approximately 68% of the state's electric retail sales, and analyzing this data provides significant insight into the state's RPS progress.

[1] California's 20% RPS by 2020 was established in 2002 under Senate Bill (SB) 1078 (Sher) and modified in 2006 under SB 107 (Simitian). SB 2 of the First Extraordinary Session (SB 2 (1x)) (Simitian) (Stats. 2011, ch.1) expanded the mandate to a 33% RPS by 2020.

[2] More information on the CSI and SGIP can be found on the CPUC's website: http://www.cpuc.ca.gov/PUC/energy/DistGen/.

[3] In the case of renewable customer generation, the system-owner owns the renewable energy credits (RECs), but could sell the RECs to retail sellers to contribute to their RPS targets.

II. EXECUTIVE SUMMARY

Status of RPS Procurement

- On August 1, 2014, the three large IOUs reported in their annual 33% RPS Compliance Reports that they collectively served 20.9% of their retail electric load with RPS-eligible generation during the first compliance period, which is from 2011 to 2013. PG&E served 20.6% of its 2011-13 retail sales with RPS-eligible renewable energy, SCE with 20.7% and SDG&E with 21.6%. Pursuant to the procurement requirements in SB 2 (1X), the IOUs must average 20% renewable energy during 2011-13.
- During the second compliance period, which is from 2014 to 2016, the large IOUs anticipate that they will be able to exceed the requirement of procuring 25% of retail sales from RPS eligible resources by 2016.[4] The three large IOUs anticipate procuring about 26.8% of retail sales in 2014, about 29.7% retail sales in 2015, and about 30.9% in 2016.
- Since 2003, 10,338 MW of renewable capacity achieved commercial operation under the RPS program. In 2015, 169 MW of capacity reached commercial operation.

Highlights of Recent Events

- In the first quarter of 2015 the Commission approved 8 contracts, representing 1,560 MW of RPS capacity.
- On February 10 and 11, 2015, the Energy Division staff conducted a workshop to discuss the new RPS calculator and its role in facilitating the achievement of the state RPS goals cost effectively with the least impact to the environment.

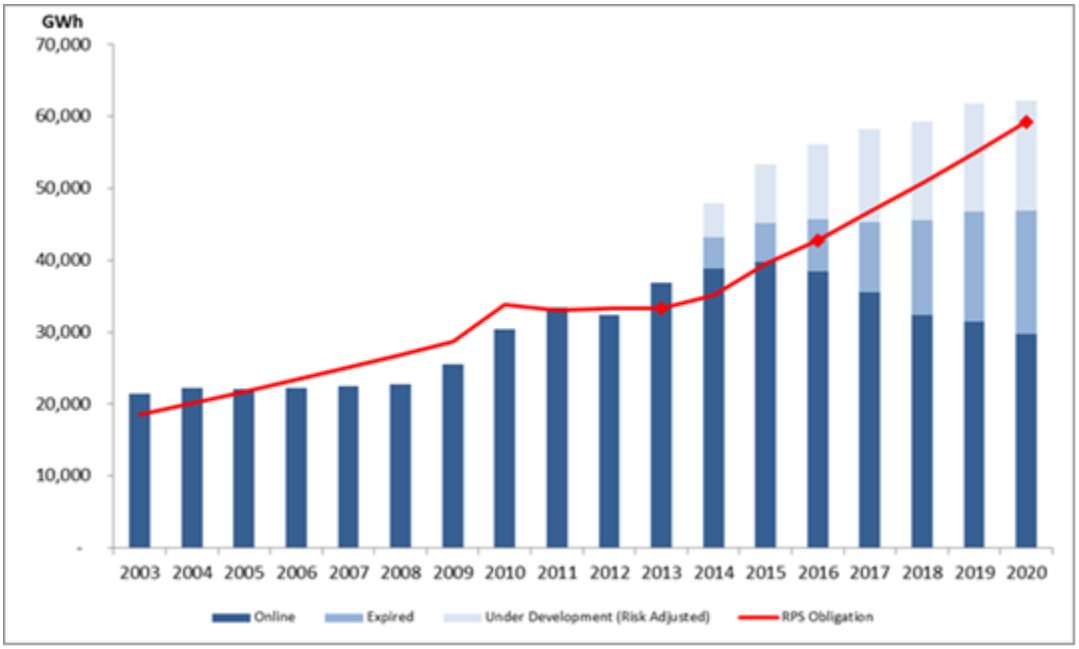
[4] All RPS forecasts are subject to verification by the California Energy Commission. The figures presented in this report are preliminary forecasts that are self-reported by the large IOUs and have not been risk adjusted in any capacity.

III. PROGRESS TOWARDS A 33% RPS BY 2020

California is aggressively procuring renewable generation to ensure that 33% of retail sales is met with renewable energy resources by 2020. The figure below shows progress toward meeting that mandate, on a risk adjusted basis.[5] The IOUs reported meeting the 20% requirement for 2011-13 in their April 1, 2014 RPS Procurement Progress Reports.[6] These reports also show that the IOUs are on track to meet the RPS requirement of 25% renewables by 2016 and are well-positioned to meet the 33% requirement by 2020.

While the figure below forecasts a surplus of renewable generation for 2014-16 and a deficit for 2017-20, it should be noted that the IOUs have the option to apply excess procurement in 2011-13 and 2014-16 RPS procurement toward meeting RPS obligations in 2017-20 or beyond. In order to achieve 33% in 2020 and every year thereafter, IOUs are also planning for additional procurement in 2015-20 and post-2020.

Figure 1: IOU progress towards 33% renewables, actual and forecasted by year [7and 8]



[5] Values are risk adjusted to account for a certain degree of project failure. The failure rate assumptions used for each IOU are those provided by the IOUs in their 2014 RPS Plans. On average, PG&E assumes a 10% failure rate for new projects not yet online, SCE assumes a 25% failure rate and SDG&E assumes a 14% failure rate for new projects not yet online.

[6] A final compliance determination is made by the CPUC on "Verified" RPS compliance reports, which are submitted after the CEC completes its RPS Verification analysis, which is not expected until Q4 2015.

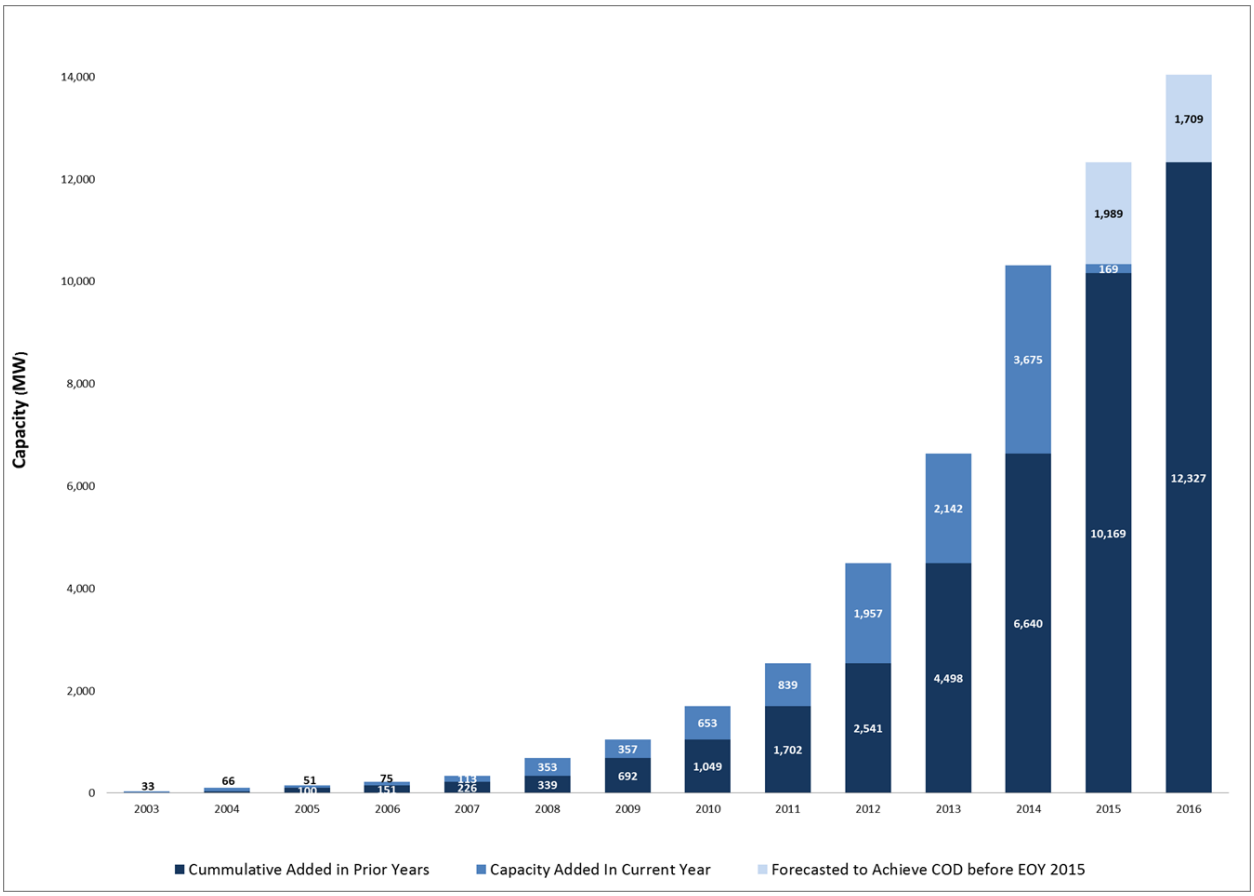
[7] Data Source: 2003-2010 data sourced from the Final 20% RPS Closing Report (January 2014); 2011-2020 data sourced from the Annual 33% Compliance Reports (August 2014).

[8] The RPS obligation varies to reflect the targets defined in SB 2 (1X); 20% by December 31, 2013, 25% by December 31, 2016 and 33% by 2020.

CPUC APPROVED RENEWABLE CAPACITY ADDED IN 2015

Since 2003, 10,338 MW of renewable capacity achieved commercial operation under the RPS program. In 2015, 169 MW of renewable capacity has come online. An additional 1,989 MW of renewable capacity is forecasted to come online in 2015.

Figure 2: RPS capacity installed since 2003 by year [9 and 10]



RPS RENEWABLE RESOURCE MIX

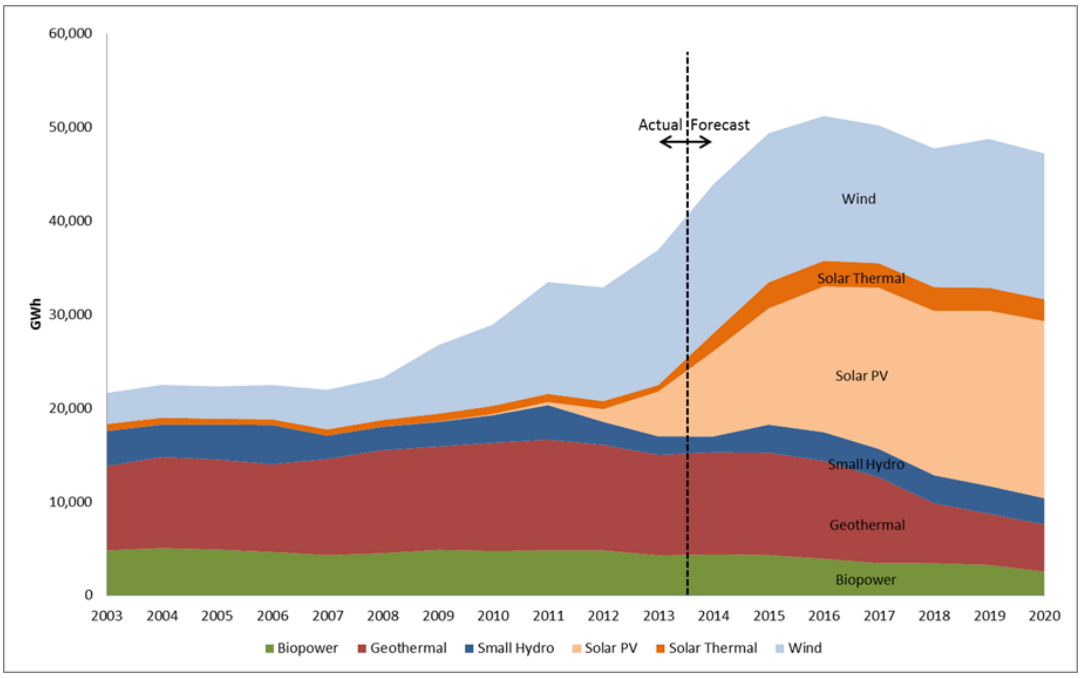
The mix of technologies bidding into and receiving PPAs through RPS solicitations has shifted over the life of the RPS program. In 2014, wind contributed 36% and geothermal contributed 25%, supplying the majority of California's renewable generation. The generation mix in 2020 is expected to reflect a considerable increase in generation coming online from new solar PV. Solar PV and solar thermal generating facilities are forecasted to contribute 40% and 5%, respectively, of the state's total renewable generation by 2020.[11] The figure below displays California's actual and forecasted mix of renewable generation by technology type through 2020.

[9] Data Source: IOU submissions to the RPS Contract Database (March 16, 2015)

[10] The actual capacity data for 2014 in this report (3,675 MW) differs from the forecast capacity data in the Q4 2014 RPS quarterly report (3,529 MW) because more projects achieved COD than initially forecasted in Q4 2014.

[11] The actual forecast will be updated after the IOUs submit the Annual 33% Compliance report on August 1, 2015.

Figure 3: Renewable resource mix, actual and forecasted by year [12] and[13]



Biopower is defined as biomass and biogas technologies.

RPS CONTRACTING ACTIVITIES IN 2015

Since 2002, the Commission has approved more than 418 RPS PPAs for over 21,600 MW of renewable capacity. As Table 1 below shows, the Commission approved 8 additional contracts in the first quarter of 2015, representing 1,560 MW of RPS capacity.

Table 1: IOU RPS-eligible contracts submitted and/or approved in 2015 [14]

		PGE		SCE		SDGE		Total	
		Number of Contracts	MW	Number of Contracts	MW	Number of Contracts	MW	Number of Contracts	MW
Q1	Submitted	0	0	0	0	0	0	0	0
	Pending	0	0	0	0	0	0	0	0
	Approved	1	5	7	1,555	0	0	8	1,560

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[12] Data Source: IOUs' Annual 33% Compliance Reports (August 1, 2014). Figure 3 only depicts existing IOU renewable contracts. It does not account for facilities that may be online and may receive new contracts after their current contracts expire.

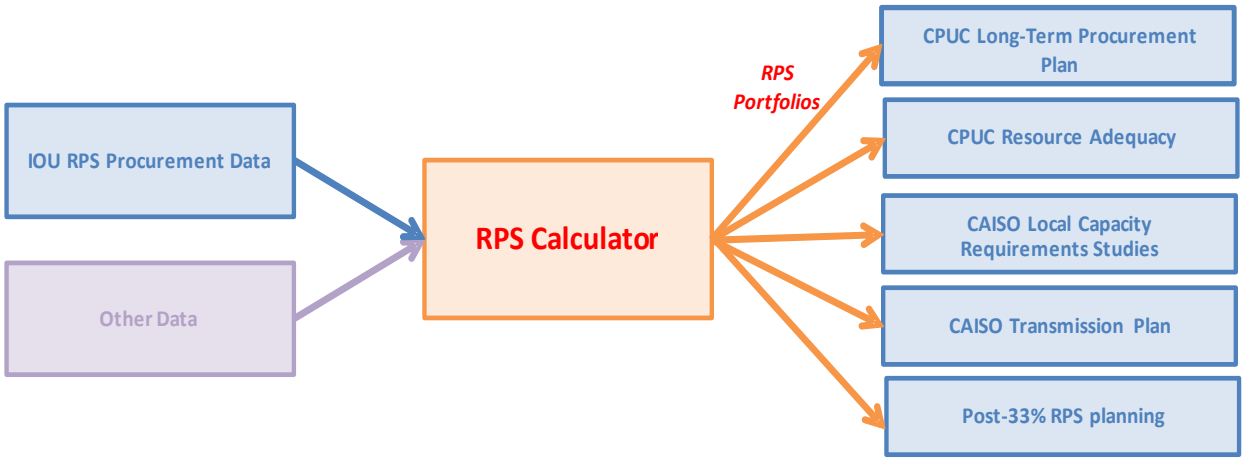
[13] The actual forecast will be updated after the IOUs submit the Annual 33% Compliance report on August 1, 2015.

[14] Data Source: IOU submissions to the RPS Contract Database (March 16, 2015)

IV. THE RPS CALCULATOR

The RPS Calculator is a planning tool used to forecast renewable resource development in California.

Figure 4: The RPS Calculator generates renewable portfolios that are used in multiple planning processes



OVERHAULING THE RPS CALCULATOR TO ADDRESS NEW INTEGRATION CHALLENGES

The RPS Calculator was first developed in 2009. Subsequent technological improvements and cost reductions, together with the prospect of a higher RPS target and associated integration challenges, recently motivated Energy Division staff to undertake an extensive overhaul of the RPS Calculator. A draft of the new RPS Calculator (version 6.0) was released in October 2014.[15] The new RPS Calculator addresses integration challenges that future additional renewable energy development in California faces, including declining capacity value and potential overgeneration. The anticipated result is that the new RPS Calculator will produce a more balanced, plausible renewable energy portfolio.

Over the next year and half, staff will continue to work with stakeholders to vet the new RPS Calculator's methodology, inputs and assumptions, and outputs. Significant technical issues to be addressed include: 1) the effect of partially deliverable or non-deliverable ("energy-only") capacity status; and 2) the effect of alternative future load shapes (e.g., a load shape associated with a substantial increase in electric vehicle charging). In addition to technical issues, staff are soliciting stakeholder perspectives on how to align the RPS Calculator with other activities both within the CPUC and across sister agencies to further enhance the efficiency, transparency, and mutual consistency of statewide planning processes, including environmental and land-use planning. CPUC staff plans to form working groups and hold workshops to engage stakeholders on these critical issues.

[15] http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/RPS+Calculator+Home.htm

V. RECENT AND UPCOMING EVENTS

Timing	Deliverable	Notes
February 10 and 11, 2015	RPS Calculator Workshop	The Energy Division held a workshop to discuss and explore revisions to the RPS calculator.
March 6, 2015	Order Instituting Rulemaking (OIR) for the RPS Program	Issuance of Rulemaking (R.) 15-02-020 to continue implementation and administration of the RPS Program and for further development of the RPS program
March 24, 2015	SCE 2014 RPS solicitation short list	In accordance with Ordering Paragraph 33 of Decision 14-11-042, SCE submitted its 2014 RPS solicitation short list to the Executive Director
March 27, 2015	Administrative Law Judge's Ruling in R.13-12-010	Directed SCE to perform production cost simulations for the interim variable integration cost adder
April 13, 2015	RPS Calculator Post-Workshop Ruling	Presented draft staff work plan for completing revisions to the RPS Calculator and solicited feedback on key remaining issues
April 16, 2015	Prehearing Conference in new RPS proceeding R.15-02-020	To discuss ideas and identify priorities for the RPS proceeding.
May 2015	Scoping Memo	May identify scope of issues to be considered in the RPS proceeding R.15-02-020
June 2015	Ruling on 2015 RPS Procurement Plans	Anticipated to direct Investor-owned Utilities and Energy Service Providers to file 2015 RPS Procurement Plans